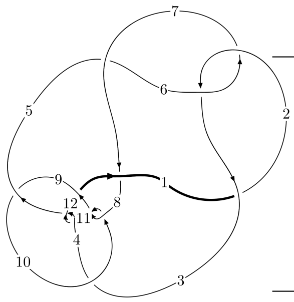
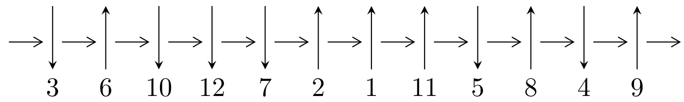
$12a_{0456}$ $(K12a_{0456})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$4,11 \xrightarrow[c_{11}]{} 12 \xrightarrow[c_4]{} 5,9 \xrightarrow[c_{12}]{} 1 \xrightarrow[c_8]{} 8 \xrightarrow[c_7]{} 7 \xrightarrow[c_{10}]{} 10 \xrightarrow[c_3]{} 3 \xrightarrow[c_1]{} 2 \xrightarrow[c_6]{} 6 \twoheadrightarrow c_2, c_5, c_9$$

Ideals for irreducible components[2] of $X_{\mathbf{par}}$

$$\begin{aligned}
I_1^u = \langle & -2.53175 \times 10^{313} u^{115} + 2.92436 \times 10^{313} u^{114} + \cdots + 2.25234 \times 10^{314} b + 8.23829 \times 10^{313}, \\
& -2.24989 \times 10^{314} u^{115} + 2.20110 \times 10^{314} u^{114} + \cdots + 3.60375 \times 10^{315} a - 2.99578 \times 10^{315}, \\
& u^{116} + 2u^{115} + \cdots + 4u + 1 \rangle \\
I_2^u = \langle & b - 1,\ 3u^3 + 2u^2 + 16a + 7u + 11,\ u^4 - u^3 + 3u^2 - 2u + 1 \rangle
\end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 120 representations.

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[1]The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2]All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I_1^u = \langle -2.53 \times 10^{313} u^{115} + 2.92 \times 10^{313} u^{114} + \cdots + 2.25 \times 10^{314} b + 8.24 \times 10^{313},\ -2.25 \times 10^{314} u^{115} + 2.20 \times 10^{314} u^{114} + \cdots + 3.60 \times 10^{315} a - 3.00 \times 10^{315},\ u^{116} + 2u^{115} + \cdots + 4u + 1 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.0624320u^{115} - 0.0610780u^{114} + \cdots - 0.624844u + 0.831296 \\ 0.112405u^{115} - 0.129836u^{114} + \cdots - 3.13673u - 0.365765 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1.36566u^{115} - 0.966684u^{114} + \cdots - 0.101173u + 0.236304 \\ -0.0575097u^{115} + 0.109899u^{114} + \cdots + 3.11321u + 0.437787 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.0499731u^{115} + 0.0687581u^{114} + \cdots + 2.51188u + 1.19706 \\ 0.112405u^{115} - 0.129836u^{114} + \cdots - 3.13673u - 0.365765 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.376542u^{115} + 0.0535687u^{114} + \cdots + 0.455051u + 0.877028 \\ -0.313567u^{115} - 1.13025u^{114} + \cdots - 9.22734u - 2.08951 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.0577405u^{115} - 0.359290u^{114} + \cdots - 2.23769u + 0.421032 \\ 0.277384u^{115} + 0.258423u^{114} + \cdots - 1.17224u + 0.102366 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1.10683u^{115} + 1.22497u^{114} + \cdots + 5.46904u + 1.96029 \\ -0.608411u^{115} - 1.03975u^{114} + \cdots - 1.36203u - 0.474932 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.448108u^{115} + 1.00733u^{114} + \cdots + 7.64578u + 1.31221 \\ 0.191247u^{115} + 0.929848u^{114} + \cdots + 9.34460u + 2.37131 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.269740u^{115} + 0.274312u^{114} + \cdots - 2.62641u - 1.27309 \\ 2.08463u^{115} + 3.62773u^{114} + \cdots + 8.91773u + 0.133485 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4.00070u^{115} - 9.56340u^{114} + \cdots - 41.1381u - 13.7651$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{116} + 38u^{115} + \cdots - 2u + 1$
c_2, c_6	$u^{116} - 2u^{115} + \cdots - u^2 + 1$
c_3	$16(16u^{116} - 117u^{115} + \cdots - 5135u + 3001)$
c_4, c_{11}	$u^{116} + 2u^{115} + \cdots + 4u + 1$
c_7	$u^{116} + 10u^{115} + \cdots + 1233680u + 97600$
c_8, c_{10}	$u^{116} + 5u^{115} + \cdots + 2505u + 256$
c_9	$u^{116} + 3u^{115} + \cdots + 26496u + 4096$
c_{12}	$16(16u^{116} + 237u^{115} + \cdots - 7715u + 289)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{116} + 82y^{115} + \cdots - 14y + 1$
c_2, c_6	$y^{116} + 38y^{115} + \cdots - 2y + 1$
c_3	$256(256y^{116} + 3815y^{115} + \cdots - 5.95490 \times 10^8 y + 9006001)$
c_4, c_{11}	$y^{116} - 62y^{115} + \cdots - 2y + 1$
c_7	$y^{116} + 14y^{115} + \cdots + 306040470400y + 9525760000$
c_8, c_{10}	$y^{116} - 67y^{115} + \cdots - 938449y + 65536$
c_9	$y^{116} - 27y^{115} + \cdots + 438878208y + 16777216$
c_{12}	$256(256y^{116} + 14007y^{115} + \cdots - 1.71712 \times 10^7 y + 83521)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.932975 + 0.380055I$ $a = 0.50615 - 1.93295I$ $b = 1.18511 - 0.91051I$	$3.59446 - 4.25759I$	0
$u = 0.932975 - 0.380055I$ $a = 0.50615 + 1.93295I$ $b = 1.18511 + 0.91051I$	$3.59446 + 4.25759I$	0
$u = -0.942443 + 0.386528I$ $a = 0.48712 + 1.95718I$ $b = 1.16351 + 0.96120I$	$2.72521 + 9.87166I$	0
$u = -0.942443 - 0.386528I$ $a = 0.48712 - 1.95718I$ $b = 1.16351 - 0.96120I$	$2.72521 - 9.87166I$	0
$u = -1.015520 + 0.079924I$ $a = 2.86594 + 5.65897I$ $b = 0.943003 - 0.008732I$	$1.51330 - 0.01120I$	0
$u = -1.015520 - 0.079924I$ $a = 2.86594 - 5.65897I$ $b = 0.943003 + 0.008732I$	$1.51330 + 0.01120I$	0
$u = 0.921677 + 0.322581I$ $a = 0.47350 - 1.83013I$ $b = 1.102010 - 0.674058I$	$1.18239 - 2.90297I$	0
$u = 0.921677 - 0.322581I$ $a = 0.47350 + 1.83013I$ $b = 1.102010 + 0.674058I$	$1.18239 + 2.90297I$	0
$u = -0.966971 + 0.356693I$ $a = 0.42098 + 1.89144I$ $b = 0.991776 + 0.891367I$	$-2.25470 + 4.58566I$	0
$u = -0.966971 - 0.356693I$ $a = 0.42098 - 1.89144I$ $b = 0.991776 - 0.891367I$	$-2.25470 - 4.58566I$	0

	Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$1.025030+0.133441I$		
$a=$	$2.16050-2.96069I$	$-3.74478-0.00361I$	0
$b=$	$0.820014-0.004042I$		
$u=$	$1.025030-0.133441I$		
$a=$	$2.16050+2.96069I$	$-3.74478+0.00361I$	0
$b=$	$0.820014+0.004042I$		
$u=$	$1.032360+0.089616I$		
$a=$	$3.52581-4.46017I$	$0.64084+5.41192I$	0
$b=$	$0.924511+0.036679I$		
$u=$	$1.032360-0.089616I$		
$a=$	$3.52581+4.46017I$	$0.64084-5.41192I$	0
$b=$	$0.924511-0.036679I$		
$u=$	$-0.933101+0.165578I$		
$a=$	$0.15820+2.41425I$	$0.097528+0.717924I$	0
$b=$	$0.963208+0.212678I$		
$u=$	$-0.933101-0.165578I$		
$a=$	$0.15820-2.41425I$	$0.097528-0.717924I$	0
$b=$	$0.963208-0.212678I$		
$u=$	$1.040820+0.176639I$		
$a=$	$1.70112-1.62243I$	$-0.10015-5.28988I$	0
$b=$	$0.587537-0.040637I$		
$u=$	$1.040820-0.176639I$		
$a=$	$1.70112+1.62243I$	$-0.10015+5.28988I$	0
$b=$	$0.587537+0.040637I$		
$u=$	$-1.051100+0.195133I$		
$a=$	$1.13277+1.30258I$	$0.514456+0.135291I$	0
$b=$	$0.433420+0.197090I$		
$u=$	$-1.051100-0.195133I$		
$a=$	$1.13277-1.30258I$	$0.514456-0.135291I$	0
$b=$	$0.433420-0.197090I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.168018 + 1.071190I$ $a = 0.338703 + 0.172300I$ $b = -1.151900 + 0.484030I$	$-1.45169 - 6.87895I$	0
$u = -0.168018 - 1.071190I$ $a = 0.338703 - 0.172300I$ $b = -1.151900 - 0.484030I$	$-1.45169 + 6.87895I$	0
$u = 0.837697 + 0.351028I$ $a = 0.63116 - 1.69354I$ $b = 1.40819 - 0.57266I$	$4.57854 - 2.68459I$	0
$u = 0.837697 - 0.351028I$ $a = 0.63116 + 1.69354I$ $b = 1.40819 + 0.57266I$	$4.57854 + 2.68459I$	0
$u = -0.133686 + 1.084940I$ $a = 0.288829 + 0.186794I$ $b = -1.250560 + 0.482907I$	$4.19362 - 13.02090I$	0
$u = -0.133686 - 1.084940I$ $a = 0.288829 - 0.186794I$ $b = -1.250560 - 0.482907I$	$4.19362 + 13.02090I$	0
$u = -0.255673 + 1.064880I$ $a = 0.403088 + 0.100874I$ $b = -1.002170 + 0.401779I$	$0.405726 - 0.191311I$	0
$u = -0.255673 - 1.064880I$ $a = 0.403088 - 0.100874I$ $b = -1.002170 - 0.401779I$	$0.405726 + 0.191311I$	0
$u = 0.139068 + 1.094320I$ $a = 0.288556 - 0.170981I$ $b = -1.242370 - 0.453261I$	$5.30484 + 7.16529I$	0
$u = 0.139068 - 1.094320I$ $a = 0.288556 + 0.170981I$ $b = -1.242370 + 0.453261I$	$5.30484 - 7.16529I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.064290 + 0.320997I$ $a = 0.25708 + 1.62401I$ $b = 0.484658 + 0.861383I$	$0.553410 - 0.120359I$	0
$u = -1.064290 - 0.320997I$ $a = 0.25708 - 1.62401I$ $b = 0.484658 - 0.861383I$	$0.553410 + 0.120359I$	0
$u = -0.815607 + 0.351086I$ $a = 0.66682 + 1.62768I$ $b = 1.45666 + 0.51569I$	$4.00667 - 2.83899I$	0
$u = -0.815607 - 0.351086I$ $a = 0.66682 - 1.62768I$ $b = 1.45666 - 0.51569I$	$4.00667 + 2.83899I$	0
$u = 0.197323 + 1.109430I$ $a = 0.334392 - 0.117534I$ $b = -1.125740 - 0.385168I$	$2.84490 + 4.28893I$	0
$u = 0.197323 - 1.109430I$ $a = 0.334392 + 0.117534I$ $b = -1.125740 + 0.385168I$	$2.84490 - 4.28893I$	0
$u = 1.108580 + 0.330328I$ $a = 0.07789 - 1.50159I$ $b = 0.268886 - 0.939607I$	$0.73853 - 5.21162I$	0
$u = 1.108580 - 0.330328I$ $a = 0.07789 + 1.50159I$ $b = 0.268886 + 0.939607I$	$0.73853 + 5.21162I$	0
$u = 1.030480 + 0.600228I$ $a = 0.787511 + 0.802602I$ $b = -0.629673 + 0.394217I$	$-1.91929 + 4.20741I$	0
$u = 1.030480 - 0.600228I$ $a = 0.787511 - 0.802602I$ $b = -0.629673 - 0.394217I$	$-1.91929 - 4.20741I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.033930 + 0.672720I$ $a = 0.632515 - 0.738424I$ $b = -0.713327 - 0.320995I$	$-0.60389 + 1.31728I$	0
$u = -1.033930 - 0.672720I$ $a = 0.632515 + 0.738424I$ $b = -0.713327 + 0.320995I$	$-0.60389 - 1.31728I$	0
$u = -0.712038 + 0.268205I$ $a = 0.544099 + 1.124880I$ $b = 1.41778 + 0.18424I$	$-0.13211 + 1.45451I$	$-1.69686 - 4.01852I$
$u = -0.712038 - 0.268205I$ $a = 0.544099 - 1.124880I$ $b = 1.41778 - 0.18424I$	$-0.13211 - 1.45451I$	$-1.69686 + 4.01852I$
$u = 0.239199 + 0.710424I$ $a = 0.779803 - 0.124579I$ $b = -0.398169 - 0.538145I$	$-1.17035 + 3.60756I$	$-3.17763 - 3.80286I$
$u = 0.239199 - 0.710424I$ $a = 0.779803 + 0.124579I$ $b = -0.398169 + 0.538145I$	$-1.17035 - 3.60756I$	$-3.17763 + 3.80286I$
$u = 1.190100 + 0.393431I$ $a = -0.50179 - 1.42134I$ $b = -0.195049 - 1.264670I$	$-1.98641 - 6.48143I$	0
$u = 1.190100 - 0.393431I$ $a = -0.50179 + 1.42134I$ $b = -0.195049 + 1.264670I$	$-1.98641 + 6.48143I$	0
$u = 1.205200 + 0.360020I$ $a = -0.401169 - 1.223780I$ $b = -0.236390 - 1.062780I$	$-3.83829 - 4.36811I$	0
$u = 1.205200 - 0.360020I$ $a = -0.401169 + 1.223780I$ $b = -0.236390 + 1.062780I$	$-3.83829 + 4.36811I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.193840+0.399946I$ $a=-0.54952+1.42991I$ $b=-0.225922+1.298760I$	$-3.05221+12.12590I$	0
$u=-1.193840-0.399946I$ $a=-0.54952-1.42991I$ $b=-0.225922-1.298760I$	$-3.05221-12.12590I$	0
$u=-1.211410+0.388213I$ $a=-0.559229+1.294670I$ $b=-0.310138+1.203680I$	$-8.10394+6.21848I$	0
$u=-1.211410-0.388213I$ $a=-0.559229-1.294670I$ $b=-0.310138-1.203680I$	$-8.10394-6.21848I$	0
$u=1.133830+0.616400I$ $a=0.594258+1.041120I$ $b=-0.797894+0.496771I$	$-6.67592-2.20639I$	0
$u=1.133830-0.616400I$ $a=0.594258-1.041120I$ $b=-0.797894-0.496771I$	$-6.67592+2.20639I$	0
$u=-1.238500+0.366883I$ $a=-0.541186+1.087490I$ $b=-0.411510+1.043980I$	$-5.39668+0.15552I$	0
$u=-1.238500-0.366883I$ $a=-0.541186-1.087490I$ $b=-0.411510-1.043980I$	$-5.39668-0.15552I$	0
$u=-0.619178+0.338799I$ $a=0.942625+0.930733I$ $b=1.57822+0.02039I$	$4.51489+6.13738I$	$5.17778-7.54514I$
$u=-0.619178-0.338799I$ $a=0.942625-0.930733I$ $b=1.57822-0.02039I$	$4.51489-6.13738I$	$5.17778+7.54514I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.593224 + 0.328294I$ $a = 0.945133 - 0.834395I$ $b = 1.54650 + 0.02847I$	$5.21239 - 0.58460I$	$6.91499 + 2.03694I$
$u = 0.593224 - 0.328294I$ $a = 0.945133 + 0.834395I$ $b = 1.54650 - 0.02847I$	$5.21239 + 0.58460I$	$6.91499 - 2.03694I$
$u = 1.287070 + 0.320286I$ $a = -0.445671 - 0.757330I$ $b = -0.517943 - 0.762187I$	$-4.95775 - 3.95723I$	0
$u = 1.287070 - 0.320286I$ $a = -0.445671 + 0.757330I$ $b = -0.517943 + 0.762187I$	$-4.95775 + 3.95723I$	0
$u = -1.314910 + 0.223822I$ $a = -0.192367 + 0.486790I$ $b = -0.469371 + 0.450322I$	$-3.07974 + 0.33761I$	0
$u = -1.314910 - 0.223822I$ $a = -0.192367 - 0.486790I$ $b = -0.469371 - 0.450322I$	$-3.07974 - 0.33761I$	0
$u = 0.107181 + 0.653140I$ $a = 0.906215 - 0.203840I$ $b = -0.147931 - 0.713160I$	$-4.33398 - 2.39690I$	$-5.75709 + 3.17963I$
$u = 0.107181 - 0.653140I$ $a = 0.906215 + 0.203840I$ $b = -0.147931 + 0.713160I$	$-4.33398 + 2.39690I$	$-5.75709 - 3.17963I$
$u = 0.178790 + 1.338570I$ $a = 0.266652 - 0.006836I$ $b = -1.120380 - 0.115989I$	$8.74835 + 3.17154I$	0
$u = 0.178790 - 1.338570I$ $a = 0.266652 + 0.006836I$ $b = -1.120380 + 0.115989I$	$8.74835 - 3.17154I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.206210 + 0.613574I$ $a = 0.384852 + 1.227350I$ $b = -0.959000 + 0.561231I$	$-3.65725 - 8.87599I$	0
$u = 1.206210 - 0.613574I$ $a = 0.384852 - 1.227350I$ $b = -0.959000 - 0.561231I$	$-3.65725 + 8.87599I$	0
$u = 0.033600 + 0.642239I$ $a = 0.985142 - 0.244254I$ $b = 0.011037 - 0.835334I$	$0.46430 - 8.24496I$	$0.50974 + 7.18818I$
$u = 0.033600 - 0.642239I$ $a = 0.985142 + 0.244254I$ $b = 0.011037 + 0.835334I$	$0.46430 + 8.24496I$	$0.50974 - 7.18818I$
$u = -1.193650 + 0.658691I$ $a = 0.345947 - 1.049920I$ $b = -0.944344 - 0.451052I$	$-1.78250 + 4.18645I$	0
$u = -1.193650 - 0.658691I$ $a = 0.345947 + 1.049920I$ $b = -0.944344 + 0.451052I$	$-1.78250 - 4.18645I$	0
$u = -0.034663 + 0.616794I$ $a = 0.998131 + 0.215645I$ $b = 0.056574 + 0.777691I$	$1.50714 + 2.68871I$	$2.49575 - 2.58539I$
$u = -0.034663 - 0.616794I$ $a = 0.998131 - 0.215645I$ $b = 0.056574 - 0.777691I$	$1.50714 - 2.68871I$	$2.49575 + 2.58539I$
$u = -0.340191 + 0.489590I$ $a = 0.901844 - 0.007398I$ $b = -0.213986 + 0.244163I$	$0.011500 + 1.083370I$	$-2.30792 - 3.75059I$
$u = -0.340191 - 0.489590I$ $a = 0.901844 + 0.007398I$ $b = -0.213986 - 0.244163I$	$0.011500 - 1.083370I$	$-2.30792 + 3.75059I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.275660 + 0.593237I$ $a = \ \ 0.06995 - 1.46230I$ $b = -1.192240 - 0.626878I$	$-2.86858 + 6.11454I$	0
$u = -1.275660 - 0.593237I$ $a = \ \ 0.06995 + 1.46230I$ $b = -1.192240 + 0.626878I$	$-2.86858 - 6.11454I$	0
$u = \ \ 1.381390 + 0.301986I$ $a = -0.486626 - 0.402298I$ $b = -0.726966 - 0.529704I$	$-6.88096 + 1.98077I$	0
$u = \ \ 1.381390 - 0.301986I$ $a = -0.486626 + 0.402298I$ $b = -0.726966 + 0.529704I$	$-6.88096 - 1.98077I$	0
$u = -1.29250 + 0.58088I$ $a = -0.03961 - 1.57216I$ $b = -1.28137 - 0.66517I$	$-4.98176 + 12.74390I$	0
$u = -1.29250 - 0.58088I$ $a = -0.03961 + 1.57216I$ $b = -1.28137 + 0.66517I$	$-4.98176 - 12.74390I$	0
$u = \ \ 1.29226 + 0.59404I$ $a = -0.04653 + 1.47058I$ $b = -1.261460 + 0.604557I$	$-0.62576 - 10.29630I$	0
$u = \ \ 1.29226 - 0.59404I$ $a = -0.04653 - 1.47058I$ $b = -1.261460 - 0.604557I$	$-0.62576 + 10.29630I$	0
$u = -1.30349 + 0.57782I$ $a = -0.13130 - 1.60635I$ $b = -1.34309 - 0.66340I$	$0.5378 + 18.9008I$	0
$u = -1.30349 - 0.57782I$ $a = -0.13130 + 1.60635I$ $b = -1.34309 + 0.66340I$	$0.5378 - 18.9008I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.30373+0.58142I$ $a = -0.13459+1.57454I$ $b = -1.33738+0.64400I$	$1.66025-13.08200I$	0
$u = \quad 1.30373-0.58142I$ $a = -0.13459-1.57454I$ $b = -1.33738-0.64400I$	$1.66025+13.08200I$	0
$u = -0.386795+0.388376I$ $a = \quad 1.229680+0.337965I$ $b = \quad 1.35766-0.42189I$	$4.14545-6.42366I$	$5.06027+4.33078I$
$u = -0.386795-0.388376I$ $a = \quad 1.229680-0.337965I$ $b = \quad 1.35766+0.42189I$	$4.14545+6.42366I$	$5.06027-4.33078I$
$u = \quad 0.405228+0.367597I$ $a = \quad 1.185670-0.375547I$ $b = \quad 1.37406+0.36367I$	$4.93612+0.86391I$	$6.86019+1.04991I$
$u = \quad 0.405228-0.367597I$ $a = \quad 1.185670+0.375547I$ $b = \quad 1.37406-0.36367I$	$4.93612-0.86391I$	$6.86019-1.04991I$
$u = \quad 1.31376+0.62961I$ $a = -0.158778+1.224320I$ $b = -1.266390+0.437367I$	$5.12704-9.72281I$	0
$u = \quad 1.31376-0.62961I$ $a = -0.158778-1.224320I$ $b = -1.266390-0.437367I$	$5.12704+9.72281I$	0
$u = -1.31432+0.64276I$ $a = -0.140832-1.155560I$ $b = -1.239700-0.403441I$	$5.00542+3.74494I$	0
$u = -1.31432-0.64276I$ $a = -0.140832+1.155560I$ $b = -1.239700+0.403441I$	$5.00542-3.74494I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.26974 + 1.46073I$ $a = 0.262189 - 0.026077I$ $b = -1.054360 + 0.082304I$	$8.58527 + 3.04895I$	0
$u = -0.26974 - 1.46073I$ $a = 0.262189 + 0.026077I$ $b = -1.054360 - 0.082304I$	$8.58527 - 3.04895I$	0
$u = 1.46981 + 0.32497I$ $a = -0.532496 - 0.175783I$ $b = -0.886516 - 0.390567I$	$-1.19925 + 7.69678I$	0
$u = 1.46981 - 0.32497I$ $a = -0.532496 + 0.175783I$ $b = -0.886516 + 0.390567I$	$-1.19925 - 7.69678I$	0
$u = 0.459714 + 0.168334I$ $a = 0.786644 - 0.302575I$ $b = 1.281580 + 0.086509I$	$2.35130 + 0.01962I$	$6.92796 + 1.30693I$
$u = 0.459714 - 0.168334I$ $a = 0.786644 + 0.302575I$ $b = 1.281580 - 0.086509I$	$2.35130 - 0.01962I$	$6.92796 - 1.30693I$
$u = -0.162843 + 0.460600I$ $a = 0.963740 + 0.056991I$ $b = -0.004343 + 0.338203I$	$-0.011505 + 1.030340I$	$0.09970 - 5.57726I$
$u = -0.162843 - 0.460600I$ $a = 0.963740 - 0.056991I$ $b = -0.004343 - 0.338203I$	$-0.011505 - 1.030340I$	$0.09970 + 5.57726I$
$u = -1.48354 + 0.29138I$ $a = -0.463830 + 0.164782I$ $b = -0.843739 + 0.340266I$	$-0.22909 - 1.82469I$	0
$u = -1.48354 - 0.29138I$ $a = -0.463830 - 0.164782I$ $b = -0.843739 - 0.340266I$	$-0.22909 + 1.82469I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.163731 + 0.440161I$ $a = 1.185900 - 0.001397I$ $b = 0.819743 - 0.557047I$	$2.94920 + 3.29370I$	$5.18784 - 3.60846I$
$u = -0.163731 - 0.440161I$ $a = 1.185900 + 0.001397I$ $b = 0.819743 + 0.557047I$	$2.94920 - 3.29370I$	$5.18784 + 3.60846I$
$u = 0.116072 + 0.451977I$ $a = 1.153390 + 0.040725I$ $b = 0.680537 + 0.544028I$	$3.42477 + 2.02673I$	$6.58023 - 3.04514I$
$u = 0.116072 - 0.451977I$ $a = 1.153390 - 0.040725I$ $b = 0.680537 - 0.544028I$	$3.42477 - 2.02673I$	$6.58023 + 3.04514I$
$u = -0.291018 + 0.355390I$ $a = 1.161280 + 0.179300I$ $b = 1.145130 - 0.402487I$	$-0.58774 - 1.37393I$	$-0.877677 + 0.764145I$
$u = -0.291018 - 0.355390I$ $a = 1.161280 - 0.179300I$ $b = 1.145130 + 0.402487I$	$-0.58774 + 1.37393I$	$-0.877677 - 0.764145I$

II. $\boldsymbol{I_2^u = \langle b-1,\ 3u^3+2u^2+16a+7u+11,\ u^4-u^3+3u^2-2u+1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{3}{16}u^3-\frac{1}{8}u^2-\frac{7}{16}u-\frac{11}{16} \\ 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.347656u^3+0.0234375u^2+0.832031u+1.31641 \\ -\frac{3}{16}u^3+\frac{7}{8}u^2-\frac{7}{16}u-\frac{11}{16} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -\frac{3}{16}u^3-\frac{1}{8}u^2-\frac{7}{16}u-\frac{27}{16} \\ 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.347656u^3-1.02344u^2-0.832031u-1.31641 \\ -0.812500u^3+3.12500u^2-1.56250u+1.68750 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{3}{16}u^3-\frac{1}{8}u^2-\frac{7}{16}u-\frac{11}{16} \\ 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.371094u^3-0.210938u^2+1.01172u-0.347656 \\ -\frac{5}{16}u^3+\frac{1}{8}u^2-\frac{1}{16}u+\frac{3}{16} \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.507813u^3-0.0781250u^2+1.22656u+0.945313 \\ -\frac{3}{8}u^3+\frac{7}{4}u^2-\frac{7}{8}u-\frac{3}{8} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -1.37109u^3+0.210938u^2-3.01172u+0.347656 \\ \frac{21}{16}u^3+\frac{7}{8}u^2+\frac{17}{16}u+\frac{13}{16} \end{pmatrix}$$

(ii) Obstruction class $=1$

(iii) Cusp Shapes $= -\frac{631}{256}u^3+\frac{1427}{128}u^2-\frac{187}{256}u+\frac{1025}{256}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_{11}	$u^4 - u^3 + 3u^2 - 2u + 1$
c_2	$u^4 - u^3 + u^2 + 1$
c_3	$16(16u^4 - 5u^3 + 8u^2 - u + 1)$
c_4	$u^4 + u^3 + 3u^2 + 2u + 1$
c_6	$u^4 + u^3 + u^2 + 1$
c_7	$u^4 - 5u^3 + 7u^2 - 2u + 1$
c_8	$(u+1)^4$
c_9	u^4
c_{10}	$(u-1)^4$
c_{12}	$16(16u^4 - 35u^3 + 28u^2 - 9u + 1)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_{11}	$y^4 + 5y^3 + 7y^2 + 2y + 1$
c_2, c_6	$y^4 + y^3 + 3y^2 + 2y + 1$
c_3	$256(256y^4 + 231y^3 + 86y^2 + 15y + 1)$
c_7	$y^4 - 11y^3 + 31y^2 + 10y + 1$
c_8, c_{10}	$(y-1)^4$
c_9	y^4
c_{12}	$256(256y^4 - 329y^3 + 186y^2 - 25y + 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.395123 + 0.506844I$ $a = -0.802241 - 0.291908I$ $b = 1.00000$	$1.43393 - 1.41510I$	$3.19039 + 3.83087I$
$u = 0.395123 - 0.506844I$ $a = -0.802241 + 0.291908I$ $b = 1.00000$	$1.43393 + 1.41510I$	$3.19039 - 3.83087I$
$u = 0.10488 + 1.55249I$ $a = -0.291509 - 0.027926I$ $b = 1.00000$	$8.43568 - 3.16396I$	$-20.9541 + 11.5932I$
$u = 0.10488 - 1.55249I$ $a = -0.291509 + 0.027926I$ $b = 1.00000$	$8.43568 + 3.16396I$	$-20.9541 - 11.5932I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5	$(u^4 - u^3 + 3u^2 - 2u + 1)(u^{116} + 38u^{115} + \cdots - 2u + 1)$
c_2	$(u^4 - u^3 + u^2 + 1)(u^{116} - 2u^{115} + \cdots - u^2 + 1)$
c_3	$256(16u^4 - 5u^3 + \cdots - u + 1)(16u^{116} - 117u^{115} + \cdots - 5135u + 3001)$
c_4	$(u^4 + u^3 + 3u^2 + 2u + 1)(u^{116} + 2u^{115} + \cdots + 4u + 1)$
c_6	$(u^4 + u^3 + u^2 + 1)(u^{116} - 2u^{115} + \cdots - u^2 + 1)$
c_7	$(u^4 - 5u^3 + 7u^2 - 2u + 1)(u^{116} + 10u^{115} + \cdots + 1233680u + 97600)$
c_8	$((u + 1)^4)(u^{116} + 5u^{115} + \cdots + 2505u + 256)$
c_9	$u^4(u^{116} + 3u^{115} + \cdots + 26496u + 4096)$
c_{10}	$((u - 1)^4)(u^{116} + 5u^{115} + \cdots + 2505u + 256)$
c_{11}	$(u^4 - u^3 + 3u^2 - 2u + 1)(u^{116} + 2u^{115} + \cdots + 4u + 1)$
c_{12}	$256(16u^4 - 35u^3 + 28u^2 - 9u + 1)$ $\cdot (16u^{116} + 237u^{115} + \cdots - 7715u + 289)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^4+5y^3+7y^2+2y+1)(y^{116}+82y^{115}+\cdots-14y+1)$
c_2, c_6	$(y^4+y^3+3y^2+2y+1)(y^{116}+38y^{115}+\cdots-2y+1)$
c_3	$65536(256y^4+231y^3+86y^2+15y+1)$ $\cdot(256y^{116}+3815y^{115}+\cdots-595489869y+9006001)$
c_4, c_{11}	$(y^4+5y^3+7y^2+2y+1)(y^{116}-62y^{115}+\cdots-2y+1)$
c_7	$(y^4-11y^3+31y^2+10y+1)$ $\cdot(y^{116}+14y^{115}+\cdots+306040470400y+9525760000)$
c_8, c_{10}	$((y-1)^4)(y^{116}-67y^{115}+\cdots-938449y+65536)$
c_9	$y^4(y^{116}-27y^{115}+\cdots+4.38878\times10^8y+1.67772\times10^7)$
c_{12}	$65536(256y^4-329y^3+186y^2-25y+1)$ $\cdot(256y^{116}+14007y^{115}+\cdots-17171165y+83521)$